

PHOTO PRINTERS

INTRODUCTION

There's no shortage of online and high street photo printing services, but nothing beats the convenience of printing your photos at home. A compact photo printer might seem ideal for the job, but if you want to print a text document or a larger photo, they're useless. Why use two printers when one can do the job better?

Most regular A4 inkjets can produce a decent photo print on special paper, but if you want to print a lot of photos at home, you should look for a high-quality photo printer. The best photo inkjets produce superb prints quickly, and cost no more to use than the digital print kiosks on the high street.

This month, we've gathered nine of the best A4 photo inkjets from the four major inkjet manufacturers. We've printed nearly 2,000 pages of plain paper and more than 700 photos to help you find your perfect printing printer.

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The right photo printer can turn your digital snaps into great-looking glossy prints and knock out smart text documents, too. Shopper challenged nine inkjets to create the perfect photo finish

PICTURE PERFECT



Choosing a... Photo Printer

All the inkjets in this test print a decent photo on glossy paper, but there's a big difference between the fastest and slowest printers. The quality of photo and plain paper prints also differs. Before you can choose the right printer, you must think about what you want to print and whether or not you want the printer to work with your digital camera.

DIRECT APPROACH

First you must decide if you want to be able to print directly from your digital camera or its memory card. All but one of the printers in this test have a PictBridge USB port, so you can connect a compatible camera and make photo prints.

Five of the printers have memory card slots and a colour screen, so you can remove the card from your camera or mobile phone and browse its contents before choosing which photos to print. Printers with memory card slots also act as card readers for a PC, so you could use them to help manage and back up your photos.

HAPPY MEDIA

All the photo inkjets can print on plain or coated paper, but some are more versatile. Two Canon printers and

two Epsoms can print on suitably coated CD and DVD discs. Each manufacturer has a range of papers; some include business card, sticker or T-shirt printing kits.

Canon's PIXMA iP4200 and iP5200 each have two paper trays, so you can keep a stock of coated paper in one and plain in the other. Both can automatically print on both sides of each page (duplex printing), saving paper and making booklet printing easy. HP's Photosmart 8250 can't print on CDs, but it has a second tray for storing 6x4" photo paper. A duplex adaptor is available as an optional accessory.

THE CARTRIDGE FAMILY

Standard inkjets use black ink to print text, and cyan, magenta and yellow inks for colour prints. This is fine for office documents and quick prints, but often you can spot individual dots of cyan or magenta in light areas. Many photo printers avoid this graininess by using extra, lighter cyan and magenta inks in light areas. Six printers use six inks, two use five and one uses four. We were surprised that not all the six-ink devices printed with less visible grain than the four-ink Epson Stylus R220.

Some inkjets print rapidly on plain paper, but all inkjets slow down for photo prints to achieve their



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highest print quality. Some are much slower than others, as the results on page 114 show.

IN THE RUNNING

Inkjets have a reputation for being pricy to run, but this isn't always fair. Our run-down test results show the best printers use less than 40 pence-worth of ink for an A4 photo. Allowing for premium photo papers, which can be 60p per sheet, the most expensive printers here are still cheaper to use than online stores for large prints.

That said, our research for this test underlined the difficulty buyers face when obtaining and

comparing inkjet running costs. Several manufacturers seemed reluctant to release yield figures for their new cartridges until the arrival of a new testing standard, currently in development.

This is understandable because the rate at which inkjets use ink varies widely depending on the job in hand, so it's hard to arrive at a standard ink consumption test. All the same, we think consumers have a right to make an informed buying decision. To calculate print costs ourselves, we ran a set of exhaustive run-down tests, counting the number of prints each cartridge could create before running out.

How we test Photo printers

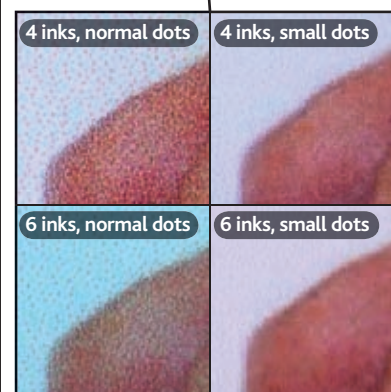
To test each printer's plain paper performance, we printed 50 pages of a text document at an acceptable draft quality. We increased print quality to a level suitable for correspondence and timed how long each printer took to print 50 copies of a letter. We printed a graphically rich, 24-page mixed-colour document using the same settings.

To assess photo speed and quality, we set a printer to the highest available photo quality before printing two 10x8" photos on its manufacturer's own glossy A4 photo paper. We also printed and timed six borderless 6x4" photo prints.

When possible, we tested direct printing functions by printing six borderless 6x4" photos from an SD memory card where supported, or through PictBridge if not. To assess photo quality we made prints of high-resolution colour and black-and-white shots.

Finally, we fitted each printer with a new set of ink cartridges and, using the default photo quality, we printed A4 photos with borders until we had replaced each cartridge at least once. We divided the cost of each cartridge by the number of pages printed, totalling these costs for each printer to calculate its ink cost per A4 photo.

Inkjet printer quality illustrated



▲ Individual dots of ink appear as grain in inkjet prints. Some inkjets tackle this with extra cyan and magenta inks (bottom left), which show up less on white paper. Others, such as Canon's PIXMA iP4200, use smaller droplets (top right). Printers such as Epson's Stylus R340 (bottom right) use both techniques to give the best results.



EPSON Stylus Photo R220

★★★★

£54 inc VAT

Epson's Stylus Photo R220 is the most affordable printer in this test, but it's also the only one with no form of direct printing. It has a front USB port, but this is a second PC connection rather than a PictBridge interface.

This printer is less basic in other ways, though. It uses almost the exact same six-ink print engine as the Epson Stylus Photo R340, which costs considerably more. Like all three Epson printers in this test, it has sturdy trays that support paper well and prevent printed pages curling.

Each of the printer's six inks comes in its own cartridge, so you replace only the one that has run out. In our run-down test, the light magenta cartridge was the first to give out after 76 A4 pages of continuous printing. Cyan lasted the longest at 142 pages.

We noticed that the R220 primed its heads each time we replaced a cartridge, which often made the reported level of other ink tanks drop. While the first light magenta cartridge printed continuously, the second was subject to three priming cycles as we replaced other cartridges. It lasted for 66 pages, 10 fewer than the first had managed.

Text printed at the R220's Draft setting was pale and prone to horizontal stripes. We had to run our 50-page document test at the Text setting to achieve satisfactory print quality, leading to a slow print speed of 2.8ppm. Text from the R220 had spidery outlines at anything below the Text and Image setting we used for our letter and mixed-colour tests.

The Stylus R220 was the slowest printer in both our PC photo tests, but its results were among the best. It reproduced images with accurate colours and no visible grain, although prints seemed a touch soft compared with those from the Canon inkjets.

VERDICT

The R220 is slow to produce decent results on plain paper and has no direct printing capability. However, it's extremely affordable and produces excellent photos.

SUMMARY

- ✓ Inexpensive to buy and run
- ✓ High-quality photos
- ✗ No direct printing
- ✗ Underperforms on plain paper

SIX-COLOUR INKJET 5,760x1,440dpi maximum resolution, two USB interfaces
PART CODE C11C626032
SUPPLIER www.amazon.co.uk
DETAILS www.epson.co.uk



LEXMARK P915

★★★★

£64 inc VAT

The Lexmark P915 is the least expensive inkjet here to offer memory card slots and a colour screen. Its 6.3cm display is as big as any in this group, and it has a good picture. Lexmark's install program is easy to understand.

The P915 is sold with a three-ink photo and a three-colour cartridge, giving it six inks in total. This setup is great for printing photos, but it's slower and less economical than four inks when printing black text. Lexmark has no figure for how many text pages the photo setup will print. Text quality from a new photo cartridge began to deteriorate after we had printed 201 copies of our mono letter, which suggests that each page costs around 8p.

When we performed our timed tests using each printer's standard cartridges, the P915 was almost as slow as the Epson inkjets on plain paper. With no black cartridge, it was the slowest at printing our 50-page document.

We replaced the photo cartridge with a #34 black cartridge and repeated our plain paper tests. It produced our draft document at 11.5 pages per minute (ppm), our letter test at 8.2ppm and our mixed colour pages at 1.5ppm. These results compare well with those of the other printers here, but the P915's print quality wasn't great. Text printed with either cartridge configuration had rough outlines.

The P915 printed sharp photos, but its direct prints suffered from grain. The worst grain seemed to be concentrated in certain regions of each print, and our 6x4" shots had visible banding towards the right-hand edge. Colour reproduction was fairly accurate, but some direct prints suffered from a green bias.

VERDICT

This inkjet is easy to set up and use, but all the other printers here produce better prints. It's affordable to buy, but our tests suggest that it's one of the most expensive to run. The P915 is competing with newer, better printers than it did when we gave it three stars in February 2005. It costs less now, but it wouldn't be our choice.

SUMMARY

- ✓ Lots of features for the price
- ✗ Slow on plain paper
- ✗ Expensive to run
- ✗ Disappointing prints

SIX-COLOUR INKJET 4,800x1,200dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE 21B0802
SUPPLIER www.savastore.com
DETAILS www.lexmark.co.uk



CANON PIXMA iP4200

★★★★★

£66 inc VAT



We reviewed Canon's PIXMA iP4200 in our December 2005 round-up of budget inkjets. It had just been released and cost £104, making it the second most expensive printer in that test. Since then, it has become £38 cheaper.

The iP4200 is a sophisticated inkjet. Its 9,600x2,400 dots per inch (dpi) resolution means it can place ink droplets with four times the resolution of the HP or Lexmark inkjets. It uses an unusual five-colour setup with no light cyan or light magenta inks. These are usually necessary to reduce grain, but the iP4200 uses such small ink droplets that grain is less visible.

Like the similar PIXMA iP5200, the iP4200 has two paper trays and comes with automatic duplex printing as standard. It doesn't have memory card slots or a screen, but there is a PictBridge port for use with digital cameras.

When we tested the iP4200 for our December 2005 Labs test, we noticed a glitch in its Standard text printing that didn't show up during this test. Consequently, its 6.7ppm result in our letter test was more than three times faster than its previous performance of 2.1ppm. It produced high-quality prints on plain paper but, as with other PIXMA printers we've tested, the same settings produced inferior prints when duplex printing.

The iP4200 prints sharper images than the other printers in this test, with no grain visible to the naked eye. We were less impressed with its colour accuracy, however. Our PC prints had a warm brown colour cast, and all our test photographs were reproduced with over-saturated colours. This produces flatteringly rosy skin tones, but we prefer greater accuracy.

VERDICT

In our previous test, we criticised the iP4200 for costing too much to buy and run. Fortunately, this is no longer the case. It was the most economical printer in our run-down test, and costs calculated with Canon's figures are now quite acceptable. This is an impressive printer for the money.

SUMMARY

- ✓ Fast
- ✓ Photos are sharp and grain-free
- ✓ Flexible paper handling
- ✗ No display or card slots

FIVE-COLOUR INKJET 9,600x2,400dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE 9992A011AA
SUPPLIER www.amazon.co.uk
DETAILS www.canon.co.uk



EPSON Stylus Photo R240

★★★★

£74 inc VAT

Epson's Stylus Photo R240 has an icon-based direct printing menu that can be hard to figure out. Icons on the front panel that set the paper type look as if they might control print quality; we had to refer to the manual for clarification. The screen is too small to be an effective photo viewer, but picture quality is fine.

Setting up the R240 involves installing its four ink cartridges and running Epson's friendly and quick installation program. All three Epson inkjets in this test have manual head alignment, although each routine is different. The R240's is the slowest as it involves printing three sheets.

The slow head alignment process does at least set the tone for the R240's performance on plain paper, which is glacial. To achieve acceptable print quality we had to run our 50-page document test using the Text setting. Even at the Text and Image setting, text had spidery outlines. We had to run our letter and mixed-colour tests at the Photo setting for satisfactory results.

Epson's Basic print interface is easy to use, yet the Advanced settings page provides more quality options than any other manufacturers' drivers. We run our standard photo tests at the highest available quality, which includes selecting two advanced options on Epson inkjets. This often produces excellent photos, but it's very slow. Fortunately, the R240's speed was acceptable in our photo printing tests.

This is the only four-ink printer in this group, but its photo quality was better than results from the six-ink Lexmark P915. Grain wasn't too evident in PC prints, and colours were accurate, except for a green cast to our test black-and-white photo. Direct prints had more grain and some over-saturation.

VERDICT

Our run-down tests suggest the inexpensive R240 is a very economical printer. Although it has only four inks, it produces high-quality photos and good colour prints on plain paper. Unfortunately, it's much slower than the PIXMA iP4200 and HP Photosmart 8050.

SUMMARY

- ✓ High-quality photos and colour prints
- ✓ Inexpensive
- ✗ Very slow
- ✗ Poor text quality

FOUR-COLOUR INKJET 5,760x1,440dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE C11C606012
SUPPLIER www.amazon.co.uk
DETAILS www.epson.co.uk



HP Photosmart 8050

★★★★★

£88 inc VAT

Three of the printers in this group use two ink cartridges, each of which contains three inks to give a total of six colours. Of these, HP's Photosmart 8050 is the only printer that comes with black, three-colour and photo three-colour cartridges.

It's good to be able to get the best from a new printer without having to buy further supplies, even if the cartridges bundled with the Photosmart 8050 are only standard-yield items. While you're not using the photo or black cartridge, you can keep it in a neat compartment inside the printer.

We recorded the times listed on page 114 using four inks on plain paper and six inks for photo printing. With the black cartridge installed, the 8050 achieved the fastest mono text printing in this group, producing high-quality results rapidly. It was also one of the fastest photo printers when printing with six inks, but we were less satisfied with the results.

It's not unusual for an inkjet's paper-feed mechanism to leave rows of tiny marks on the surface of a photo, and these were particularly noticeable in dark regions of prints from the 8050. These marks usually fade as a print dries, but on the 8050 they were still unusually prominent after several hours. Photos were grainier than those from most of the other six-ink printers, particularly on direct prints.

Some of our high-resolution test photos have been cropped and have unusual proportions. Most of the printers in this test printed them with borders on two or four sides, but both HP printers enlarged each image enough for a true borderless print. The 8050's screen is a little on the small side, but its direct menu system is easy to use.

VERDICT

The Photosmart 8050 is great value. It has reasonable running costs and comes with the necessary supplies for photo and every day prints. It was quick in all our tests and produced reasonably good photos, but several other printers produced better.

SUMMARY

- ✓ Good all-round print quality
- ✓ Quick and easy to use
- ✓ Low running costs
- ✗ Trackwheel marks on some photos

SIX-COLOUR INKJET 4,800x1,200dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE Q6351B
SUPPLIER www.dabs.com
DETAILS www.hp.co.uk



CANON PIXMA iP5200

★★★★★

£92 inc VAT

Canon's PIXMA iP5200 is very similar in shape and specification to the PIXMA iP4200 printer. Both inkjets use a similar print engine, but Canon says the iP5200 prints faster, particularly in colour.

Like the iP4200, this printer uses Canon's five-ink ContrastPLUS system, which uses black pigment ink to print strong dark text on plain paper and dye-based black, cyan, magenta and yellow inks for colour printing on plain or photo paper. Black pigment ink is used on photos only to enhance contrast in the very darkest regions.

With similar print engines the PIXMA iP5200 and iP4200 should have comparable photo printing costs. When we performed our run-down test on the PIXMA iP4200, it printed 74 A4 photos before the yellow ink needed replacing. Black was the last dye ink to run out after an impressive 126 pages. Even after this many pages, the black pigment cartridge was full, confirming that it's barely used in typical photo prints.

Given this inkjet's similarity to the iP4200, we weren't surprised that it produced similar prints in all our tests. Text was very black, with superbly crisp outlines. Photographs were sharp and free from grain, but suffered from some unnaturally vivid colours.

The iP4200 printed some graphics in our mixed-colour test with a trace of banding, but the iP5200 didn't. However, both printers introduced a dark band to the right-hand side of some PowerPoint slides.

Although both printers produced prints of similar quality, we were surprised by how much quicker the iP5200 was. The iP5200 proved around 50 per cent faster in our PC photo tests, and printed draft text 40 per cent faster.

VERDICT

The iP5200 is a competent photo printer and a good all-rounder, but at this price we'd expect it to have memory card slots and a colour screen. Unless print speed is really important, we'd recommend that you buy the PIXMA iP4200 and save £26.

SUMMARY

- ✓ Sharp prints and grain-free photos
- ✓ Very fast
- ✗ No display
- ✗ No card slots

FIVE-COLOUR INKJET 9,600x2,400dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE 9993A011AA
SUPPLIER <http://uk.insight.com>
DETAILS www.canon.co.uk



EPSON Stylus Photo R340

★★

£112 inc VAT

Epson's Stylus Photo R340 is one of the most expensive inkjets in this test, but it uses a very similar print engine to the £54 Stylus Photo R220. Unlike the R220, though, the R340 has a PictBridge port, memory card slots and a large colour screen.

The R340 is easy to set up on a PC, but it doesn't prompt you to align its print heads. The manual alignment process prints only one page of patterns. Both the R220 and R340 can print on specially coated CDs.

The R340's menu system is clear and easier to use than the Stylus Photo R240's, with a more extensive setup menu and helpful text directions. It's possible to select a very high print quality for direct photo printing but this results in slow performance, as we found out.

The R340 was slow in all our tests. As with the R240, it printed text with shabby outlines at any quality setting below Photo, and its Draft text was pale and striped. Higher settings produced acceptable results but made printing excruciatingly slow. HP's Photosmart 8250 could run off all our PC-based print tests and complete six photos from an SD card before the R340 finished our 50-page letter test.

The R340 was slow when printing photographs at its highest quality, but the results were excellent. Images lacked the impressive sharpness of the PIXMA iP4200's and iP5200's results, but they had more accurate colours. This printer produced the best direct prints of the group. Prints had very little grain and skin tones were extremely convincing, but bright colours looked a little enhanced and unnatural.

This printer uses the same ink cartridges as the R220 and a similar print engine. We would expect its running costs to be near-identical.

VERDICT

This printer is worth considering only if you're not in a hurry for results. Even then, we'd recommend you spend a little more on the Photosmart 8250 if you need direct printing, or buy the R220 if you don't.

SUMMARY

- ✓ High-quality photos
- ✓ Great screen
- ✗ Slow
- ✗ Expensive

SIX-COLOUR INKJET 5,760x1,440dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE C11C607101
SUPPLIER www.amazon.co.uk
DETAILS www.epson.co.uk



CANON PIXMA iP6220D

★

£116 inc VAT

This is the most expensive Canon inkjet in this test, but it doesn't feel like it. Many of its covers and paper trays seem flimsy compared with those of the other two PIXMA printers. The paper input tray looks odd when extended, and closing it is fiddly.

The iP6220D has a large colour screen for direct printing, but photo previews don't take advantage of its full area. It isn't very sharp or bright and each menu page seems to fade into the next.

Unlike the iP4200 and iP5200, the iP6220D has a conventional two-cartridge setup with three inks in each. This six-ink setup is similar to those of the Lexmark P915 and HP Photosmart 8050, but amazingly the iP6220D can't use a dedicated black ink cartridge.

The iP6220D is much faster than the Lexmark P915 and Epson printers when printing black text, but it can't match the other Canon or HP printers. Canon couldn't tell us how many pages of black text the photo cartridge would last, but we were able to print 216 copies of our letter test before the print quality started to fail. This works out at just under nine pence per page, which suggests the iP6220D is the most expensive text printer here.

The iP6220D is aimed at photography use, however, and it makes a better photo printer. It was one of the fastest to complete our photo tests when printing from a computer, and it recorded the quickest time for our six direct prints. Unfortunately, it was narrowly the most expensive in our photo run-down test.

Given the high-quality results from the other PIXMAs in this test, we were a little disappointed with the iP6220D's print quality. Photos, colour prints on plain paper and text all seemed too pale. Our direct photo prints were a little washed-out.

VERDICT

We can't recommend the iP6220D. The other Canon printers feel markedly superior, and HP's Photosmart 8250 costs only £14 more and is a far better printer.

SUMMARY

- ✓ Fast photo printer
- ✗ Pale photos
- ✗ No black cartridge
- ✗ Expensive to run

SIX-COLOUR INKJET 4,800x1,200dpi maximum resolution, USB Hi-Speed, iRDA and PictBridge USB interfaces
PART CODE 0011B011AA
SUPPLIER www.dabs.com
DETAILS www.canon.co.uk



HP Photosmart 8250

★★★★★

£130 inc VAT



HP's Photosmart 8250 has been on our Also Consider list since we first reviewed it in December 2005. It impressed us then with its speed, flexibility and low running costs, so we have included it here to see how it compares with a new group of photo printers. The 8250 prints with six inks, but unlike other HP photo printers it uses six individual cartridges.

This is the only inkjet on test to have ink tanks that don't move with the print heads during printing. Instead, capillary tubes carry ink from the static tanks to the printer's heads. The print heads remain in the printer and are not replaced with every new cartridge.

The 8250's direct printing features are similar to those of the Photosmart 8050, but it has a larger preview screen. It has a second paper tray that holds 6x4" photo paper. We found both the HP printers in this test tricky to load with A4 paper, and the 8250's output is untidy at its highest speeds.

There's no need to swap the 8250's cartridges to get its best performance on plain or photo paper. It printed both our text tests very quickly, and became the first inkjet we've tested to exceed 3ppm on our mixed-colour test. It was fastest when printing photos from a PC, but several printers were quicker when making direct prints.

Unlike the Photosmart 8050, photos from the 8250 didn't suffer from unduly prominent trackwheel marks. As in our previous tests with this printer, a region towards the right of photographs had some subtle speckled grain. Photos from the five-ink PIXMA and six-ink Epson printers had less grain overall, but the 8250 still produced sharp, detailed prints.

VERDICT

Although the Photosmart 8250 is designed for photo use, it's a convincing all-rounder that produces fast, high-quality results in a wide range of printing tasks. It may be the most expensive printer here, but it's well worth it if you can stretch your budget.

SUMMARY

- ✓ Fast and capable
- ✓ Reasonable running costs
- ✓ Easy to use
- ✗ Untidy output at fast speeds and some speckling

SIX-COLOUR INKJET 4,800x1,200dpi maximum resolution, USB Hi-Speed and PictBridge USB interfaces
PART CODE Q3470B
SUPPLIER www.amazon.co.uk
DETAILS www.hp.co.uk

PHOTO PRINTERS

BUDGET BUY				BEST BUY					
MANUFACTURER	EPSON	LEXMARK	CANON	EPSON	HP	CANON	EPSON	CANON	HP
Model	Stylus Photo R220	P915	PIXMA iP4200	Stylus Photo R240	Photosmart 8050	PIXMA iP5200	Stylus Photo R340	PIXMA iP6220D	Photosmart 8250
Rating	★★★	★★	★★★★★	★★★	★★★★	★★★	★★	★	★★★★★
QUOTED SPEEDS									
Quoted A4 speed, mono	15ppm	22ppm	29ppm	19ppm	30ppm	30ppm	15ppm	12ppm	32ppm
Quoted A4 speed, colour	15ppm	15ppm	19ppm	18ppm	24ppm	24ppm	15ppm	10ppm	31ppm
TESTED SPEEDS									
Test 1 (50-page text document)	18m 1s (2.8ppm)	31m 44s (1.6ppm)	4m 11s (12ppm)	15m 15s (3.3ppm)	2m 31s (19.9ppm)	2m 58s (16.9ppm)	18m 29s (2.7ppm)	8m 27s (5.9ppm)	2m 44s (18.3ppm)
Test 1 Duplex (50-page text document)	N/A	N/A	11m 8s (4.5ppm)	N/A	N/A	10m 10s (4.9ppm)	N/A	N/A	N/A
Test 2 (letter) – time to first page	32s	48s	14s	1m 20s	19s	12s	1m 33s	44.5s	14s
Test 2 (letter) – total time for 50 copies	21m 47s (2.3ppm)	35m 39s (1.4ppm)	7m 30s (6.7ppm)	56m 7s (0.9ppm)	9m 49s (9.8ppm)	5m 25s (9.2ppm)	1h 14m 05s (0.7ppm)	27m 26s (1.8ppm)	10m 58s (4.6ppm)
Test 3 (24 pages, mixed colour)	15m 30s (1.5ppm)	57m 4s (0.9ppm)	10m 24s (2.3ppm)	37m 14s (0.6ppm)	12m 10s (2.0ppm)	8m 43s (2.8ppm)	50m 37s (0.5ppm)	20m 28s (1.2ppm)	7m 21s (3.3ppm)
Test 4 (two 10x8" photos)	27m 34s	11m 0s	16m 43s	22m 4s	11m 12s	9m 7s	27m 25s	10m 7s	8m 17s
Test 5 (six 6x4" photos)	46m 31s	17m 7s	24m 12s	34m 12s	16m 43s	16m 50s	44m 59s	15m 54s	11m 30s
Test 6 (six 6x4" photos, direct print)	N/A	19m 20s (SD card)	9m 25s (PictBridge)	11m 14s (SD card)	10m 7s (SD card)	8m 13s (PictBridge)	42m 20s (SD card)	8m 4s (SD card)	9m 56s (SD card)
PRINT QUALITY									
Maximum resolution	5,760x1,440dpi	4,800x1,200dpi	9,600x2,400dpi	5,760x1,440dpi	4,800x1,200dpi	9,600x2,400dpi	5,760x1,440dpi	4,800x1,200dpi	4,800x1,200dpi
Minimum colour droplet size	3pl	3pl	1pl	2pl	5pl	1pl	3pl	2pl	5pl
Number of colours (cartridges)	6 (6)	6 (2)	5 (5)	4 (4)	4 (2)	5 (5)	6 (6)	6 (2)	6 (6)
Maximum number of colours (cartridges)	6 (6)	6 (2)	5 (5)	4 (4)	6 (2)	5 (5)	6 (6)	6 (2)	6 (6)
Quoted photo durability (source)	25 years (Epson)	65 years (Wilhelm)	30 years (Canon)	25 years (Epson)	108 years (Wilhelm)	30 years (Canon)	25 years (Epson)	30 years (Canon)	100 years (HP)
PHYSICAL AND ENVIRONMENTAL									
Standard interfaces	2x USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB	USB Hi-Speed, PictBridge USB, IrDA	USB Hi-Speed, PictBridge USB
Optional interfaces					HP Bluetooth adaptor (Q6398A), £28		Bluetooth adaptor (C12C824383), £67	Bluetooth adaptor (BU-20), £54	HP Bluetooth adaptor (Q6398A), £28
Dimensions (HxWxD)	196x462x263mm	150x428x237mm	160x419x299mm	172x436x268mm	158x465x230mm	160x444x309mm	188x483x300mm	172x438x260mm	160x447x385mm
Weight	5.2kg	2.9kg	6.5kg	5kg	4.2kg	7.3kg	5.4kg	3.7kg	8.5kg
Noise	45dB(A)	49dB(A)	35dB(A)	40dB(A)	41dB(A)	35dB(A)	42dB(A)	43dB(A)	48dB(A)
Duty cycle (pages per month)	460 mono/ 600 colour	3,000	Not stated	280 mono/ 300 colour	3,000	Not stated	460 mono/ 600 colour	Not stated	3,000
Power consumption printing	12W	14W	17W	10W	21W	19W	13W	11W	80W
Power consumption standby	Not stated	7W	1W	Not stated	5.3W	3W	Not stated	1W	Not stated
PAPER HANDLING									
Maximum paper size	A4/legal	A4/legal	A4/legal	A4/legal	A4/legal, custom length to 610mm	A4/legal	A4/legal	A4/legal	A4/legal, custom length to 610mm
Maximum paper weight	300gsm	500gsm	270gsm	300gsm	280gsm	270gsm	300gsm	270gsm	280gsm
Standard paper trays (capacity)	1 (120)	1 (100)	2 (300)	1 (100)	2 (100 A4, 20 6x4")	2 (300)	1 (120)	1 (100)	2 (100 A4, 20 6x4")
Maximum paper trays (capacity)	1 (120)	1 (100)	2 (300)	1 (100)	2 (100 A4, 20 6x4")	2 (300)	1 (120)	1 (100)	2 (100 A4, 20 6x4")
Duplex	No	No	Yes	No	No	Yes	No	No	Q5582A, £33
PHOTO FEATURES									
Exif support	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
PictBridge support	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
DPOF support	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Borderless printing	A4	A4	A4	A4	A4	A4	A4	A4	A4
Direct printing	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Memory card support	None	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive	None	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive	None	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive	SD, MMC, xD, CompactFlash, SMC, MS, Microdrive
CD printing	Yes	No	Yes	No	No	Yes	Yes	No	No
GENERAL									
Technology	Piezo inkjet	Thermal inkjet	Thermal inkjet	Piezo inkjet	Thermal inkjet	Thermal inkjet	Piezo inkjet	Thermal inkjet	Thermal inkjet
Supported operating systems	Windows 98/Me/2000/XP, Mac OS 9.1 or later, Mac OS X 10.2 or later	Windows 98/Me/2000/XP, Mac OS X 10.2.3-10.2.8, OS X 10.3.0 or later	Windows 98/Me/2000/XP, Mac OS X 10.2.1 or later	Windows 98 SE/Me/2000/XP, Mac OS 9.1 or later, OS X 10.2 or later	Windows 98 SE/Me/2000/XP, Mac OS X 10.2 or later	Windows 98/Me/2000/XP, Mac OS X 10.2.1 or later	Windows 98 SE/Me/2000/XP, Mac OS 9.1 or later, OS X 10.2 or later	Windows 98/Me/2000/XP, Mac OS X 10.2.1 or later	Windows 98/Me/2000/XP, Mac OS X 10.2 or later
Other features		6.3cm colour screen, automatic head alignment	Automatic head alignment	3.8cm colour screen	4.6cm colour screen, automatic head alignment	Automatic head alignment	6.1cm colour screen	6.3cm colour screen, automatic head alignment	6.4cm colour screen, automatic head alignment
Other options	Warranty extension to three years (ECPGRP25), £53	High-yield black cartridge (#34), £15		Warranty extension to three years (ECPGRP25), £53	Warranty extension to various three-year plans, #100 grey photo cartridge (C9368AE), £14		Warranty extension to three years (ECPGRP25), £53		Warranty extension to various three-year plans
PRICE AND WARRANTY									
Price including VAT	£54	£64	£66	£74	£88	£92	£112	£116	£130
Quoted life of supplied black cartridge(s)*	450 pages (5%)	N/A	360 pages (5%)	290 pages (5% estimate)	400 pages (5%)	360 pages (5%)	450 pages (5%)	N/A	800 pages (5%)
Quoted life of supplied colour cartridge(s)*	430 pages (25%)	190 pages (15%)	490 pages (20%)	290 pages (15% estimate)	260 pages (15%) or 110 10x15cm photos (six-ink)	490 pages (20%)	400 pages (25%)	270 pages (15%)	350 pages (magenta and cyan 5% each), 490 pages (yellow 5%)
Quoted life of supplied photo cartridge(s)*	N/A	135 10x15cm photos (six-ink)	N/A	N/A	130 10x15cm photos (six-ink)	N/A	N/A	Not stated	10x15cm photos: Black 1,090; magenta 280; cyan 350; yellow 170; light magenta and light cyan 240
Cost per mono A4 page including VAT	1.67p (5%)	3.19p (5% using optional black cartridge), 8p (tested with photo cartridge)	2.58p (5%)	1.99p (5% estimate)	1.75p (5%)	2.58p (5%)	1.67p (5%)	8.8p (tested with photo cartridge)	2.17p (5%)
Cost per colour A4 page including VAT*	6.50p (15%)	4.27p (15%)	6.99p (20%)	5.91p (15% estimate)	3.78p (15%)	6.99p (20%)	6.50p (15%)	6.90p (15%)	4.54p (15%)
Tested ink cost per A4 photo including VAT	55.9p	85.6p	35.8p	40.2p	52.9p	35.8p (estimate)	55.9p (estimate)	86.4p	53.0p
Warranty duration and terms	One year RTB	One year onsite exchange	One year RTB	One year RTB	One year RTB	One year RTB	One year RTB	One year RTB	One year RTB
Supplier	www.amazon.co.uk	www.savastore.com	www.amazon.co.uk	www.amazon.co.uk	www.dabs.com	http://uk.insight.com	www.amazon.co.uk	www.dabs.com	www.amazon.co.uk
Contact	www.epson.co.uk	www.lexmark.co.uk	www.canon.co.uk	www.epson.co.uk	www.hp.co.uk	www.canon.co.uk	www.epson.co.uk	www.canon.co.uk	www.hp.co.uk
Manufacturer part code	C11C626032	2180802	9992A011AA	C11C606012	Q6351B	9993A011AA	C11C607101	0011B011AA	Q3470B

*Figures based on 5% coverage per colour per page. Figures in brackets are total page coverage

Labs Verdict Photo printers

Having six inks can help a photo inkjet print with less grain, but two printers sacrifice text quality and speed to provide six-ink printing out of the box. This isn't a big problem for Lexmark's P915, which can take an optional black cartridge, but Canon's PIXMA iP6220D can't. It feels fragile and can't compete on plain paper.

The PIXMA iP4200, however, is a fast printer that produces good results on a range of jobs. Its running costs aren't that low when calculated with Canon's yield figures, but it was the most economical printer

in run-down tests. The iP4200 was expensive at its launch, but at its new low price it's our Budget Buy.

HP's Photosmart 8250 doesn't print the best photos, but it is the best photo printer. Its direct printing features are easy to use and make the most of its high-quality colour screen. It is as happy reeling off pages of mono text as it is printing photos. You don't even need to change cartridges or paper when you change print jobs. The 8250 was our Best Buy last time we reviewed it, and it is Best Buy here. **CS**

HP
Photosmart
8250



CANON
PIXMA iP4200

